Commonwealth of Massachusetts
Office of Consumer Affairs & Business Regulation
Division of Energy Resources

RENEWABLE ENERGY PORTFOLIO STANDARD

ADVISORY RULING
for
EcoPower, LLC's
Proposed Biomass Generation Unit
in Massachusetts

January 6, 2004

1. Advisory Ruling – Request of EcoPower, LLC

EcoPower, LLC has requested that the Massachusetts Division of Energy Resources (DOER or the "Division") provide an Advisory Ruling with regard to the qualification for the Massachusetts Renewable Energy Portfolio Standard (RPS) of a proposed new biomass energy plant in Massachusetts.1 This document is DOER's response to that request.

The RPS regulations, at 225 CMR 14.06(5),2 provide an opportunity for a generation unit owner or developer "to request an advisory ruling from the Division to determine whether a Generation Unit would qualify as a New Renewable Generation Unit." The primary purpose of the Advisory Ruling provision is to afford the owner or developer of an existing or new generation unit a means of assessing the likelihood and conditions under which the unit would qualify as a New Renewable Generation Unit under the RPS regulations prior to committing significant investment in time and/or money for project development. This is especially useful in the case of a biomass unit, for which the RPS regulations include fuel, technology, and air emission criteria that DOER must interpret in its evaluation of each such unit. Note that the actual, formal RPS qualification of a generation unit would be in the form of a Statement of Qualification from DOER. The unit's owner or developer would be required to supply considerably more detail in submitting an application for a Statement of Qualification. In the case of the EcoPower unit, DOER may, at its discretion, provide an opportunity for public comment on an eventual application, per the RPS regulations at 14.06(2)(c).3

[1] The EcoPower request was provided in the form of a letter to Dwayne Breger at DOER, dated August 25, 2003, received on September 8, 2003, and hereafter referenced as the 8/25/03 letter.

[2] Hereafter, all references to the RPS regulations will be to sections of 225 CMR 14.00.

[3] The application process for a Statement of Qualification is stated in the RPS regulations at Sections 14.06(1) and (2), including provisions for public comment. A Statement of Qualification signifies a finding by DOER that a generation unit is eligible as a New Renewable Generation Unit. In the case of a biomass plant, an application normally is submitted when the developer or owner can provide sufficient technical information on the plant's technology, fuel type(s), and air emissions for a thorough evaluation by DOER in consultation with the Massachusetts Department of Environmental Protection (DEP).

2. Description of Biomass Project

EcoPower plans to construct and operate a biomass plant in Massachusetts. The plant would use fluidized bed (FB) combustion technology for a steam generator with a net output of 20.9 MW. The unit would be fueled predominately with wood from Construction and Demolition (C&D) Debris Processing Facilities, possibly supplemented with other Eligible Biomass Fuels, as defined in the RPS Regulations at 14.02. The air emission limits and ash handling protocols would be determined by the plant's permit(s) from the MA DEP.

This Advisory Ruling will address the proposed plant's fuel stream, its technology, and its air emissions.

3. Discussion of Eligible Biomass Fuels

EcoPower states in its 8/25/03 letter that the generation unit would primarily burn "wood produced by permitted Construction and Demolition (C&D) Debris Processing Facilities and perhaps other nearby states." Such facilities are permitted in Massachusetts under 310 CMR 16.00 Site Assignment Regulations and 310 CMR 19.000 Solid Waste Facility Regulations. This C&D wood fuel stream may contain a de minimis amount of non-wood material. EcoPower further states that the C&D wood debris from permitted facilities "may be supplemented with wood separated directly at C&D sites along with other potential sources such as pallets, land clearing, and whole tree chips." DOER regards the proposed fuels as falling within the definition of Eligible Biomass Fuel in the RPS regulations at 14.02, including the C&D wood debris. Any wood derived from a C&D waste source will require an approval (e.g., Beneficial Use Determination) from DEP. This includes wood separated directly at C&D sites.

DOER's position with regard to C&D wood debris was stated in its "Summary of Public Comments and Agency Responses" dated February 6, 2002, and in a letter from the DEP to DOER dated January 8, 2002.4 As stated in that letter, C&D wood debris, which might include some "wood containing paints, stains, coatings or preservatives . . . can properly be considered as an eligible biomass fuel . . . as one type of 'organic refuse-derived fuel that is collected and managed separately from municipal solid waste.'"

4. Discussion of Advanced Biomass Technology

The RPS regulations provide, at Section 14.05(1)(a)6, that the qualification of biomass generation units is limited to "low emission, advanced biomass power conversion technologies using an Eligible Biomass Fuel." These criteria are designed to insure that the RPS provides incentives for older, dirtier technologies to be replaced by cleaner and more efficient technologies. DOER also believes that biomass technologies should improve over time, both

[4] Both DOER's February 6, 2002 "Summary of Public Comments and Agency Responses" (see item 1.E on page six) and the DEP's January 8, 2002 letter, to which said item 1.E makes reference, can be accessed on line at http://www.state.ma.us/doer/rps/delproc.htm.

pursuant to the incentives created by the RPS and, more broadly, continued technological progress in the electricity generation sector.

Although already commercialized, fluidized bed technology is relatively young and still undergoing significant innovation and improvement with regard to technical efficiency, cost, and emissions. EcoPower proposes to use an atmospheric, bubbling fluidized bed technology from Energy Products of Idaho, a firm that has specialized in fluidized bed technologies applicable to a wide range of biomass fuels. DOER has determined that the proposed technology represents an improvement over the fluidized bed technology of the two 1986 Indeck boilers in Maine (already qualified for RPS under the Vintage waiver provision at 14.05(2)), and that the improved technology meets the "advanced technology" criterion of the RPS regulations.

5. Discussion of Low Emissions

A generation unit using an eligible biomass fuel and advanced technology must meet the criterion of "low emissions" in order to be an eligible New Renewable Generation Unit for the RPS, per the regulations at 14.05(1)(a)6. This criterion does not set specific emission targets. Rather, the threshold for eligibility is expected to become more stringent as biomass energy conversion and emission control technologies improve. In addition, that threshold might differ among fuels, technologies, and project scale – as determined by the MA DEP. Under the RPS regulations at 14.05(1)(a)6.a, a generator must receive a valid air permit from its appropriate state air quality regulatory agency to qualify as an eligible biomass generator.[5] In addition, that same subsection provides that the project "must . . . demonstrate to the satisfaction of the Division that its emission rates are consistent with emission rates for comparable biomass units as prescribed by the Massachusetts Department of Environmental Protection."

The fact that the EcoPower project would be located in Massachusetts simplifies DOER's evaluation of this criterion. Not only would this project possess a Valid Air Permit before it begins its operation, but the emission rates in that permit would be those prescribed by the MA DEP.

The projected emission rates (in lbs/MMBtu input) for this project, as provided to EcoPower by its proposed vendor, Energy Products of Idaho, are shown in the table below. Those projected emission rates are comparable to or lower than the rates for the two Indeck biomass plants (in West Enfield and Jonesboro, ME), already approved under a Vintage Waiver. The rates will, in any case, be subject to a rigorous permitting process at the MA DEP.

DOER also notes that the proposed project would use C&D waste as its primary fuel, with the resultant potential for its air emissions and/or solid wastes to include some regulated toxics. With regard to air emissions, the project will be required to utilize BACT[6] that will be determined as part of the MA DEP's air pollution permitting process. The MA DEP will also regulate the disposal of the resulting ash.

[5] If the air quality regulations applicable in the jurisdiction where the unit is located do not require an air permit, then the unit must satisfy the requirements of the RPS regulations at 14.05(1)(a)6.c.

[6] Best Available Control Technology.

	EcoPower, LLC, Biomass Plant Massachusetts		
Generation Unit Data			
Type of Unit	Bubbling Fluidized Bed		
Date of Operation	n/a		
Emission Control Technology	BACT - design to be determined		
Plant Net Capacity, MW	20.9		
Boiler Heat Rate, MMBtu/hr	310		
Biomass Input, tons/yr	200,000		
Emission Limits	**lbs/MMBtu**	**lbs/hr**	**tons/year**
SO_2	0.035	12.01	48.04
NO_x	0.085	28.82	115.28
PM	0.02	7.96	31.84
CO	0.145	49.37	197.84
VOC	0.026	8.97	35.88
Ammonia	0.003		

6. Summary of Ruling

DOER has found the Massachusetts biomass project proposed by EcoPower to fall within the eligibility criteria for new renewable generation biomass units as described in the RPS regulations at 14.05(1)(a)6. The following summarizes this finding, and it also notes several key issues and requirements for EcoPower to consider in its project planning, and by which DOER would be guided in reviewing its application for the generation unit to qualify as a New Renewable Generation Unit for the Massachusetts RPS.

1. DOER finds the proposed fuels to be consistent with the definition of Eligible Biomass Fuels in the RPS regulations. The proposed wood fuel stream will consist of C&D woody debris from permitted C&D waste processing facilities, possibly supplemented with C&D wood source separated directly from the point of generation at C&D sites, whole tree chips, and wood from pallets and land clearing.
2. DOER finds that the atmospheric, bubbling fluidized bed technology proposed for use in the project is modern, commercial, fluidized bed technology, which has advanced over the past three decades and is more advanced than the fluidized bed technologies of two 1986 biomass plants that DOER has already approved as New Renewable Generation Units under Vintage Waivers. The improvements are sufficient to qualify the technology as an advanced biomass power conversion technology.

3. DOER finds that, whereas the proposed unit will receive its Valid Air Permit (as well as ash handling requirements) from the Massachusetts DEP, the unit will qualify as a low emission unit. The permit might cover emissions of air toxics, in addition to the criteria pollutants.
4. EcoPower should be cognizant of all state and federal standards that potentially could be applicable to the project and, of course, work cooperatively and openly with the MA DEP and with its host community during its project design, construction, and operation.
5. EcoPower should note that, while DOER may grant a Statement of Qualification for the project, it would always be contingent on EcoPower's obtaining DEP permit(s) and on its operating the plant in compliance with both (a) DEP permits and regulations (including those pertaining to air emissions, the fuel stream, and the handling of ash) and (b) DOER's RPS regulations. EcoPower should note as well that, once DOER grants a Statement of Qualification, further advances in biomass power conversion technologies will have no effect on the plant's MA RPS qualification.